

## REMARKS

Claims 1-12 are pending in this application. By this Amendment, claim 1 is amended. No new matter is added.

Applicants thank the Examiner for the indication that claims 5 and 6 contain allowable subject matter. Although claim 9 is rejected, Applicants believe that claim 9 should have been indicated as allowable for at least the same reasons as claim 5, from which claim 9 depends. Acknowledgment of the allowability of claim 9 is thus respectfully requested.

The Office Action rejects claims 1-4 and 7-12 under the judicially created doctrine of double patenting over claims 1-10 of U.S. copending application serial no. 10/792,927. The Office Action asserts the two application claim "common subject matter, as follows: the application claims are merely broader than the copending application claims" (page 2, second paragraph, of the Office Action). Applicants traverse this rejection and the assertions contained in the Office Action.

First, Applicants note that the present claims require both an NO<sub>2</sub> adsorptive catalyst layer and an NO<sub>2</sub> selective reduction catalyst layer contacting the NO<sub>2</sub> adsorptive catalyst layer. The presence of both of these two layers provides advantages that are discussed below.

In contrast, the claims of U.S. Patent No. 10/792,927 do not refer to any second layer, let alone a second layer contacting an NO<sub>2</sub> adsorptive catalyst layer. Applicants note that a limitation requiring to two layers is clearly not broader than a limitation that could be only one layer. Applicants further note

that a claim containing a limitation requiring an NO<sub>2</sub> adsorptive catalyst layer is clearly not broader than a claim missing such a limitation.

Thus, as the present claims contain elements not taught or suggested by the claims of the 10/792,927 application, it is respectfully submitted that the present claims 1-4 and 7-12 would not have been obvious thereover. Reconsideration and withdrawal of the rejection of claims 1-4 and 7-12 under the judicially created doctrine of double patenting are therefore respectfully requested.

The Office Action rejects claims 1-4 and 11 under 35 U.S.C 102(b) as being anticipated by Penetrante et al. (U.S. Patent No. 6,038,854). The Office Action also rejects claims 7-12 under 35 U.S.C 103(a) as being obvious over Penetrante et al. These rejections are traversed.

The present claims are directed to an exhaust gas purification system and require, *inter alia*, catalyst that has both "an NO<sub>2</sub> adsorptive catalyst layer and an NO<sub>2</sub> selective reduction catalyst layer contacting the NO<sub>2</sub> adsorptive catalyst layer" (excerpt of claim 1). The claims have been amended to make even more clear that the two layers are adjacent to each other. Thus the present claims require an NO<sub>2</sub> selective reduction catalyst layer that contacts an adjacent NO<sub>2</sub> adsorptive catalyst layer

Advantages of the present invention are explained in the present specification, in particular. "[i]n the gas purification system if the exhaust gas including the NO<sub>x</sub> passes the plasma reactor, NO<sub>x</sub> other than NO<sub>2</sub> is converted to NO<sub>2</sub>. On the other hand, when the NO<sub>2</sub> selective reduction catalyst layer does

not still reach a purification temperature of the NO<sub>2</sub> after a start of an engine, the NO<sub>2</sub> is adsorbed to the NO<sub>2</sub> adsorptive catalyst layer at the catalyst unit. Thus, the gas purification system enables an amount of NO<sub>2</sub> discharge to be reduced even when the NO<sub>2</sub> selective reduction catalyst layer does not still reach the purification temperature.” See the paragraph bridging pages 4 and 5 of the present specification.

Penetrante et al. does disclose that “[u]nder undesirable engine combustion conditions, the output gas flow from the particulate trap reactor may still contain emissions above the mandated levels. For example, the initial exhaust and/or the output gas flow from the particulate trap may contain an excessively larger amount (in g/bhp-hr) or NO<sub>x</sub> than that of the particulates. In such instances, a NO<sub>x</sub> reduction catalyst, e.g., SCR or NO trap catalysts, can be employed downstream of such output gas flows” (column 15, lines 29-37).

However, Penetrante et al. do not teach or suggest the inclusion of two adjacent layers including an NO<sub>2</sub> adsorptive catalyst layer and an NO<sub>2</sub> selective reduction catalyst layer contacting the NO<sub>2</sub> adsorptive catalyst layer, as required by the present claims.

Thus, Applicants respectfully submit that the present claims are patentable over Penetrante et al. for at least the above reasons.

Additionally, with particular regard to claim 2, Penetrante et al. nowhere teaches or suggests an ordering of layers in a catalyst with an NO<sub>2</sub> selective reduction catalyst layer disposed on a surface of the catalyst and an NO<sub>2</sub>

adsorptive catalyst layer disposed inside the NO<sub>2</sub> selective reduction catalyst layer, as required by present claim 2.

Additionally, with particular regard to claim 3, 4, 10 and 12, Applicants can not find a teaching in Penetrante et al. regarding “silver” as asserted in the Office Action. Applicants can only find a teaching against the use of precious metals (“enables the use of catalysts that may not require precious metals”-column 7, lines 63-64).

Reconsideration and withdrawal of the rejections of claims 1-4 and 11 under 35 U.S.C 102(b) and of claims 7-12 under 35 U.S.C 103(a) are therefore respectfully requested.

The Office Action also rejects claim 1 under 35 U.S.C 102(b) as being anticipated by Cho et al. (U.S. Published Patent Application No. 2004/0107698 A1). This rejection is traversed.

Cho et al. discloses a “catalytic converter 124” (page 4, paragraph [0036]). However, Cho et al. contains no teaching or suggestion that the catalytic converter contains two layers two adjacent layers including an NO<sub>2</sub> adsorptive catalyst layer and an NO<sub>2</sub> selective reduction catalyst layer contacting the NO<sub>2</sub> adsorptive catalyst layer, as required by the present claims.

Thus, Applicants respectfully submit that the present claim 1 is patentable over Cho et al. for at least the above reasons. Reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C 102(b) are therefore respectfully requested.

Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance is earnestly solicited. Should the Examiner believe anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any additional fees may be charged to Counsel's Deposit Account 01-2300, **referring to client-matter number 108421-00041**. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300, **referencing attorney docket number 108421-00041**.

Respectfully submitted,

  
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